QUALITY OF LIFE AMONG DIABETIC RETINOPATHY PATIENTS IN HOSPITAL UNIVERSITI SAINS MALAYSIA.

by

NORYANI BINTI ABD. LATIF

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(In the name of Allah, the most Beneficent and the most Merciful)

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ABSTRAK

KUALITI HIDUP PESAKIT DIABETIK RETINOPATI DI HOSPITAL UNIVERSITI SAINS MALAYSIA

Retinopati diabetik boleh mengurangkan kualiti hidup, ia adalah kerana penyakit ini boleh menyebabkan buta. Tujuan kajian ini adalah untuk menentukan visi skor kualiti yang berkaitan hidup dan kaitannya dengan faktor sosio-demografi di kalangan pesakit retinopati diabetes di Klinik Oftalmologi di Hospital USM, Kubang Kerian, Kelantan. Seramai 60 orang peserta telah dipilih dalam kajian ini. Ia adalah satu kajian keratan rentas. Penilaian kualiti berkaitan penglihatan-hidup telah menggunakan 25 item Institut Mata Kebangsaan Visual Fungsi Questionnaire (NEI VFQ-25). Data dikumpul dan dianalisis dengan menggunakan Statistical Package for Social Sciences (SPSS) versi 22.). Korelasi pearson, "ujian-t bebas", dan "One Way Anova" telah digunakan untuk persatuan itu. Rata-rata keseluruhan purata VFQ-25 di kalangan pesakit retinopati diabetes adalah 57,77. Tidak ada kaitan antara faktor sosio-demografi dan kualiti yang berkaitan penglihatan-hidup pesakit dengan retinopati diabetik. Komplikasi peringkat akhir mempunyai beban yang paling besar dilihat pada kualiti hidup tetapi dengan rawatan awal retinopati diabetik boleh meningkatkan kesejahteraan kualiti hidup.

Keseluruhannya pesakit dengan retinopati diabetik di Hospital USM berada dalam peringkat yang sederhana dengan skala komposit (57.77).

ABSTRACT

QUALITY OF LIFE AMONG DIABETIC RETINOPATHY PATIENTS AT HOSPITAL USM.

Diabetic retinopathy can reduce the quality of life, it's because this illness can cause blindness. The aim of this study was to determine the score vision related quality of life and its association with socio-demographic factors among diabetic retinopathy patients at the Ophthalmology Clinic at Hospital USM in Kubang Kerian, Kelantan. A total of 60 participants were selected in this study. It was a cross-sectional study. Evaluation of vision-related quality of life was using a 25 item National Eye Institute Visual Function Questionnaire (NEI VFQ-25). The data was obtained and analyzed using the Statistical Package for Social Sciences (SPSS) version 22.). The pearson correlation, "Independent t-test", and "One Way Anova" has been used for the association. The average overall score of VFQ-25 among diabetic retinopathy patients was 57.77. There was no association between the socio-demographic factors and vision-related quality of life of patients with diabetic retinopathy. End-stage complications have the greatest perceived burden on quality of life, but the early treatment diabetic retinopathy can improve well-being the quality of life. Overall, patients with diabetic retinopathy at Hospital USM is a moderate level with a composite scale (57.77).

CHAPTER 1

INTRODUCTION

1.1 Background of The Study

Quality of life (QoL) as a general term was meant to represent either how well human needs were met or the extent to which individuals or groups perceive satisfaction or dissatisfaction in various life domains. The overall assessment of human experience had been commonly expressed by the term quality of life acrossed multiple disciplines including psychology, medicine, economics, environmental science, and sociology. Vision impairment from diabetic retinophathy a considerable burden on patients' quality of life (Costanza et al., 2007) .

Diabetic retinopathy was a specific common complication of diabetes, it may not had any symptoms or may not affect sight in the early stages but, as the condition progresses, and the sight will be affected. When the condition was caught early, treatment was effective at reducing or preventing damage to sight. In Spain, 15.6% of the diabetic patients with type II Diabetic mellitus were affected by the disease in its different stages, with a 4% prevalence of proliferative diabetic retinopathy (Alcubierre et al, 2014).

Nearly all patients with type 1 diabetes mellitus and more 60% of those with type II diabetes mellitus would develop some degree of Diabetic retinopathy after 20 years of diabetes (Fenwick et al., 2010). In its non-proliferative stages, diabetic retinopathy was mostly asymptomatic but may cause significant and disabling vision lost once it progressed to severe stages. Furthermore, clinically significant diabetic macular oedema, which caused centralised vision lost, can occur at any stage. Hariprasad (2008) had mentioned in his study that diabetic macular oedema patient experienced a decrease

quality of life. The quality of life was a broad concept to measure patient's perception including the physical well-being, functional ability, emotional and social well-being by using questionnaire. The measurement of quality of life could be obtained by questionnaires, patient preferences / utilities or interview.

1.2 Problem Statements

Diabetes is a risk factor for microvascular complications such as Diabetic retinopathy. Data from Singapore showed that 34% of Asian Malay adults with diabetes had signs of retinopathy and 10% had vision-threatening retinopathy (Wong et al, 2008). According to Tajunisah (2011) diabetes is a growing concern in Malaysia. Results of National Health and Morbidity Surveys (NMHS) showed an increase in the prevalence of Diabetic Mellitus from 8.3% in 1996 to 14.9% in 2006 for Malaysian adults aged 30 years and above. There is an increase of 80% over a period of just 10 years (Zanariah et al., 2008).

Visual impairment related to Diabetic retinopathy may have serious consequences in diabetic patients. It is affecting health and leading to difficulties in treatment resulting from reduced ability of patients to manage their disease. Indeed, it has been reported that progression of Diabetic retinopathy impacts the health-related quality of life (HRQOL).

The table 1.1 showed the distribution of patients with Diabetic retinopathy in Ophthalmology Clinic Hospital USM from 2011 to 2015. The number of Diabetic retinopathy patients increasing every year. The statistics also showed an increase in number of new cases. In 2012, new cases was 98 patients and has increased to 137 patients in 2013. The pattern of new cases alarming. The average number of diabetic

1.4 Research Questions

1. What was the score level for vision-related quality of among Diabetic retinopathy patients in Hospital USM?
2. Was there any significant difference of score level vision-related quality of life between distant and near vision among Diabetic retinopathy patients at Hospital USM?
3. Was there any association between socio-demographic factors (gender, educational level, and other medical illness) and vision-related quality of life among Diabetic retinopathy patients in Hospital USM?

1.5 Hypothesis

Null hypothesis, Ho:

1. There was no significant difference the score level vision-related quality of life between distant and near vision among Diabetic retinopathy patients at Hospital USM.
2. There were no significant association between selected socio-demographic characteristics and vision-related quality of life among Diabetic retinopathy patients.

Alternative hypothesis, H_A:

1. There was a significant difference in the score level vision-related quality of life between distance and near vision among Diabetic retinopathy patients.
2. There was a significant association between selected socio-demographic characteristics and vision-related quality of life among Diabetic retinopathy patients.

1.6 Operational definitions

1.6.1 Quality of life

The effect of a disease on the way a person enjoys life, including the way illness affects a person's ability to live free of pain, to work productively, and to interact (Sanjay, 2005). This study will emphasize the level of visual functions and their general health and quality of life in Diabetic retinopathy patients. Visual Function Questionnaire consists of 12 subscales which include general health, general vision, and ocular pain, near activities, distance activities, social functioning, mental health, role difficulties, dependency, driving, colour and peripheral vision. The questionnaire take approximately 20 minutes to complete for each session. The scoring rules were used to score the survey accordingly. Each of the questionnaires is converted to scale of 0 to 100 so that the lowest and highest scores are set at 0 and 100 points respectively. Therefore, each score represent the achieved percentage of the total possible score. The overall composite score done by calculating the average of vision-targeted subscale excluding the general health question (Mangione et al., 2001).

1.6.2 Diabetic retinopathy

Diabetic retinopathy develops as a result of damage to the blood vessels in the retina, which may leak fluid or blood, causing the retina to become swollen and sometimes deposits to form. Classification of Diabetic retinopathy is proliferative diabetic retinopathy, non-proliferative diabetic retinopathy, and diabetic maculopathy. Diabetic maculopathy is the leading causes of moderate visual loss in people with diabetic. Vision loss from diabetic maculopathy is five times more than that from

proliferative Diabetic retinopathy (Alasil et al., 2010). In this study, quality of life in diabetic retinopathy patients will be reduced and will affect their daily activity.

1.7 Significants of the study

There were many previous studies (Davidov, 2009), that had reported on the Diabetic retinopathy and its association with visual function. Their aim in this study was to provide the data and examining the effectiveness of the study on the health and quality of life of patients with retinopathy. It was also proved that quality of life was reduced in diabetes mellitus itself as well as in Diabetic retinopathy. The outcome of in this study will help patients to understand the problem that may arise in quality of life among Diabetic retinopathy patients. It was also important in terms of providing social support to the patients. Suggestions could be given to the family members and the society in helping these patients in their daily life at home and at work. Family support during the follow-up clinic was also important to increase the patients understanding of their disease. This would increase the motivation to continue follow-up and hence reduction in defaulters.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

In this chapter, literature review consists of the meaning of quality of life and pathogenesis of Diabetic retinopathy. Also discuss about vision -related quality of life to the Diabetic retinopathy patients.

2.2 Quality of Life

Quality of life is a broad concept to measure patient's perception including the physical well-being, functional ability, emotional and social well-being. The health-related quality of life is one of the measurements to assess the effect of the disease on the patient (Sharma et al., 2005). It refers to the way patients enjoy life, ability to live free of pain, to work productively and interact with each other. Diabetic retinopathy is one of the ocular problems that affect the quality of life.

Diabetic retinopathy is thought to have great impact on the health related quality of life in adult's diabetes. David et al., (2009) found that their study in Germany reflects the direct and indirect effects of different aspects of diabetic retinopathy, visual acuity, and macular oedema and severity grade of diabetic retinopathy on the health related quality of life (HRQOL) of patients. It has been reported that patients with more diabetes complications, particularly having three or more complications, are likely to report poor HRQOL.

2.3 Diabetic retinopathy

Diabetic retinopathy is one of the complications of Diabetes mellitus. It is estimated that more than 60% of the world's population with diabetes will come from Asia (Chan et al., 2009). In Malaysia, the prevalence of diabetes among adults aged more than18 years old is 11.6% (Zanariah et al., 2008). Poorly controlled diabetes mellitus is associated with wide array of complications which include nephropathy, neuropathy and retinopathy.

According to Kanski & Bowling (2011) three main pathological processes occurring in diabetics that lead to diabetic retinopathy are endothelial cells damage, loss of pericytes, and thickening of capillary basement membrane. Endothelial cells are responsible in maintaining the inner blood-retinal barrier. Damage to this cells cause disruption of inner blood-retinal barrier. This will cause increased vascular permeability and the retinal vessels will become leaky. Subsequently it will give rise to the retinal haemorrhages seen as dot and blot haemorrhages.

Increased vascular permeability will also result in accumulation of extracellular fluid in the macula, causing diabetic macular oedema. Pericytes are also important in the regulation of retinal capillary perfusion. Loss of pericytes together with endothelial cell damage will cause retinal capillary damage that lead to micro aneurysm formation. Micro aneurysm is formed by local weakening and subsequent out-pouching of the capillary wall. This will increase in the thickness of the basement membrane, which will in turn contribute to the closure of the capillaries and cause vascular obstruction (Kanski & Bowling, 2011).

Other haematological changes also occur in diabetic retinopathy that predisposed to decrease in capillary blood flow. These changes are erythrocytes deformation with

rouleaux formation, reduced deformability of white cells, increase in platelet stickiness and aggregation, and increase in plasma viscosity (Fiona et al., 2006).

The resultant reduced in capillary blood flow from all of these pathological processes will lead to retinal hypoxia. This will in turn induce expression of angiogenic growth factors or vascular endothelial growth factors (VEGF). VEGF is a potent angiogenic stimulant (Ferara et al., 2003), resulting in retinal neovascularisation (Fiona, 2006).

2.4 Measurement Vision-Related Quality of Life

The health-related quality of life is one of the measurements to assess the effect of the disease on the patient (Sharma et al., 2005). It refers to the way patients enjoy life, ability to live free of pain, to work productively and interact with each other. The measurement of quality of life can be obtained by questionnaires, patient preferences/utilities or interview. The available questionnaires used to health related quality of life in diabetic patient include Visual Function Index (VF-14), Retinopathy-Dependent Quality of life (RetDQoL), National Eye Institute Visual Function Questionnaire (NEI VFQ-25) and Diabetes-39 (Lundstrom, 2006). The advantage of NEI VFQ 25 that it is specific for the patient with vision problems and related to the quality of life. It also takes a short time to be completed and patients' response will be more valid and accurate.

2.5 Instruments NEI –VFQ 25

The original version of the NEI-VFQ comprised of 52 questions. The 25-items Visual Function Questionnaire created by the National Eye Institute to survey the measurement of patient's self-reported vision-targeted health status with chronic eye

diseases. It is a shorter version which was validated in 2001 with a base set of 25 vision-targeted questions that consists of 12 subscales which include general health, general vision, and ocular pain, near activities, distance activities, social functioning, mental health, role difficulties, dependency, driving, color and peripheral vision. The questionnaires take approximately 20 minute to complete to answer the questionnaire.

2.6 Conceptual / Theoretical Framework

In this study, researcher chose the Ferrans' Conceptual model of Quality of Life (Ferrans 1996). (Figure 2.1). In this model had been told the quality of life and prosperity of life was resulting from life that is important to the patients. Everyone had a different opinion on quality of life because every individual will experience differently. The quality of life for this model will focus on four areas which include health and function domain, psychological or spiritual domain, social and economic domain and family domain.

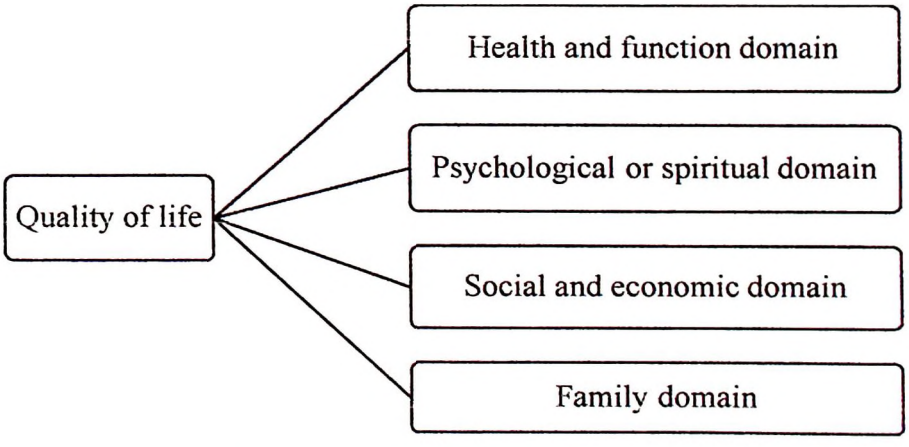

Figure 2.1: The Ferrans'Conceptual Model of Quality of Life (Ferrans, 1996)

Health and functional domain consisting of 14 elements. These elements include usefulness to others, physical independence, the ability to fulfill family responsibilities, their own health, pain, energy (lethargy), stress or anxiety, control over one's own life, stress and activities, the potential for a happy day long or retirement, the ability to travel on vacation potential for a long life, sexual and healthcare (Ferrans, 1996).

Ferrans (1996) also emphasizes the psychological or spiritual domain. There are seven elements in psychological or spiritual domain including life satisfaction, general happiness, satisfaction, personal achievement goals, peace of mind, personal appearance, and believe in god. In the domain of social and economic, there are eight elements which include the standard of living, financial freedom, shelter, human relations, employment or unemployment, emotional support from others, and education (Ferrans, 1996). Apparently these elements in social and economic domains are exist in diabetic retinopathy patients, however it is very hard for them accept because the well-being and their daily activities are hindered.

Family domain consists of four elements; happiness, family, children, relationships with spouses and family health (Ferrans, 1996). All of these domains revealed that there is no single quality of life is the same for all patients with the same burden of life. Information from this study can be used to help the families to understand the quality of life among diabetic retinopathy patients.

2.6.1. Conceptual framework of this study

The conceptual framework in this study related to the quality of life of patients with diabetic retinopathy in Hospital USM in showed in Figure 2.2. In this study, quality of life among diabetic retinopathy patients will be measured based on 7 subscales of domain. The results of this study will determine the quality of life of Diabetic retinopathy patients. Socio-demographic factors (gender, educational level, monthly income and Medical Illness) was the common factors associated with quality of life that will be analysed.

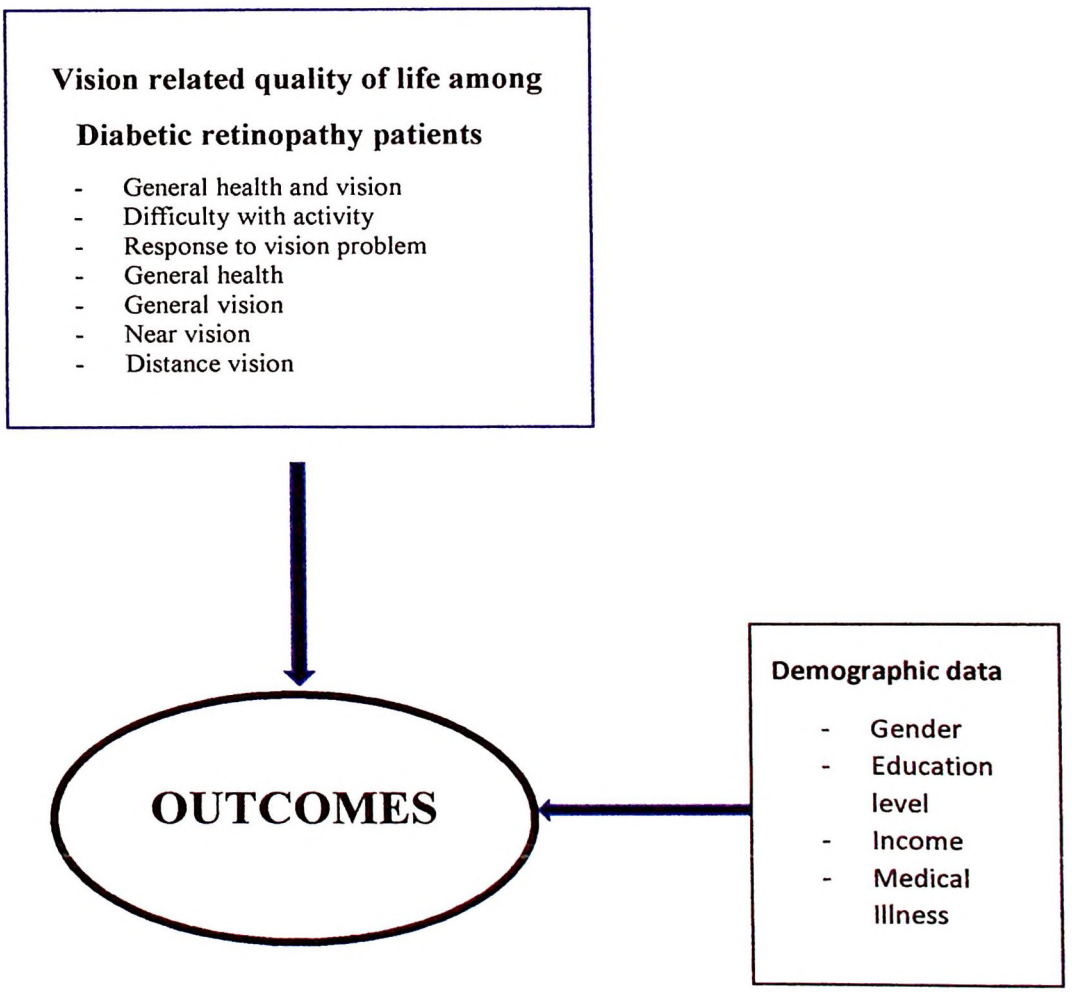

Figure 2.2. Quality of life among diabetic retinopathy patients in Hospital USM.

CHAPTER 3

METHODOLOGY

3.1 Introduction

The research method was described in this chapter including the research design, population and setting, sampling plan, variable, instrumentation, data collection plan, data analysis as well as a quality control measure, ethical consideration and expected outcome.

3.2 Research design

This was a cross-sectional study with self-administered. The data collection was started from December 2015 until February 2016.

3.3 Population and Setting

Study population: Patients with Diabetic retinopathy who attended at Ophthalmology Clinic in Hospital USM were included in this study.

Study setting: The number of patients Diabetic retinopathy were recruited from January until June 2015 as follows: January (272 patients), February (167 patients), March (248 patients), April (133 patients), May (79 patients), and June (309 patients). The monthly average number of patients was 207 patients (statistic from Ophthalmology clinic, HUSM).

3.4 Sampling Plan and Selection Criteria

3.4.1 Selection Criteria

Inclusion criteria

1. Age 30 to 65 years old (Tajunisah et al., 2011).
2. Adult male and female Diabetic retinopathy patients attended at Ophthalmology Clinic, Hospital USM.
3. Diabetic retinopathy patients with vision aquity 6/60 and better.

Exclusion criteria

1. Diabetic retinopathy patients with hearing problem (problem in the communication in which assistance is needed to answer the questionnaire)
2. Retinopathy due to other than Diabetic retinopathy.

3.4.2 Sampling Method

Participants of this study was selected through convenience sampling method. This was because the method involved the selection of samples that were both easily accessible and willing to participate in this study. Furthermore, it was suitable to be used in situation of limited sample size from the sampling frame (Teddlie & Yu, 2007). This method was applied to all Diabetic retinopathy patient that attended at Ophthalmology Clinic from December 2015 to February 2016 and would be selected based on the inclusion and exclusion criteria.

3.4.3 Sampling Size

The sample size was calculated based on objective three with requirements for significance level 0.05 and power 0.8 using Power and Sample Size Calculation Software (Version 3.0) (Dupont et al., 1990).

Objective 2: To compare the score level of vision-related quality of life between near vision and distance vision

Objective 3: To determine the association of vision–related quality of life and socio-demographic factors among diabetic retinopathy patients in Hospital USM.

α : 0.05

power : 0.8

P_o : 0.31 (Davidov et al., 2009)

P_1 : 0.69

M ; 1

n = (26x2) + 10% dropout

= 52 + (52x10 %)

= 52 + 5.2

= 57.2

The sample size for this study, n = 58 subjects

3.5 Variables Measurement

The independent variables were the selected socio-demographic data which included age, race, gender, level of education, monthly income, and medical illness. These variables measured according to patient self-report. On the other hand, the dependent variables were are from the original version of the NEI-VFQ comprised of 52 questions. The 25-items Visual Function Questionnaire created by the National Eye Institute to survey the measurement of patient's self-reported vision-targeted health status with chronic eye diseases. It is a shorter version which was validated in 2001 with a base set of 25 vision-targeted questions that consists of 12 subscales which include general health, general vision, and ocular pain, near activities, distance activities, social functioning, mental health, role difficulties, dependency, driving, colour and peripheral vision. All items are scored so that a high score represents better functioning. Each item is then converted to a 0 to 100 scale so that the lowest and highest possible scores are set at 0 and 100 points, respectively. In this format scores represent the achieved percentage of the total possible score, e.g. a score of 100 represents 100% of the highest possible score.

The questionnaires took approximately 20 minutes to answer completely. The VFQ-25 takes approximately 10 minutes on average to administer in the interviewer format (Mangione et al., 2001).

3.6 Instrumentation

3.6.1 Instrument

Data for this study would be collected using a set of self-administered questionnaire that consists part A and part B.

Part A: Socio-demographic

This section comprises of six questions to gather data on age, race, gender, and level of education, monthly income and others medical illness.

Part B: Visual Function questionnaire 25 (VFQ-25)

The VFQ-25 consists of 25 questions consist general health and vision (4 items), difficult to do activity (13 items), and reaction to the vision problem (9 items). The scoring rules were used to score the survey accordingly. Each of the questionnaires is converted to scale of 0 to 100 so that the lowest and highest scores are set at 0 and 100 points respectively. Therefore, each score represent the achieved percentage of the total possible score. The overall composite score was done by calculating the average of vision-targeted subscale excluding the general health question.

3.6.2 Translation of Instruments

The original version the National Eye Institute 25-Item Visual Function Questionnaire (VFQ-25) version 2000 was used in this study. The modified version of VF-25 was already translated into Malay language from the original and adjusted from 12 subscales to the 7 subscales according social demographic and local culture at Ophthalmology Clinic Hospital USM by previous thesis, Azreen (2008).

3.6.3 Validity

Validity of the questionnaire that was used in this study has already tested in the previous study by Azreen (2008).

3.6.4 Reliability

In the previous study that using the same instrument, a pilot study also was done to test for its reliability and found that the Cronbach alpha was 0.74. The previous study was conducted using the same population of patients at Ophthalmology Clinic Hospital USM. In view of that, researcher no need to do any pilot study for this study.

3.7 Ethical Consideration

The study was conducted after getting ethical approval from Research and Ethical Committee USM. Permission for collecting data obtained from the Director of Hospital USM, Head Of Ophthalmology Department Hospital USM, and Head Nurse Ophthalmology Clinic at Hospital USM. Written consent obtained from participants who agreed to participate in the study. Explanation on the purposes of the study was given to the participants prior data collection. Apart from that, how to answer the questionnaire and their rights to discontinue from the study are honestly explained to them. Participants was informed that all the information from the study will be kept confidential, anonymous and used for academic purpose only.

3.8 Data Collection Plan

Data for this study was collected after getting approval from the Research Ethical Committee (Human), and permission from the Director of Hospital USM. Questionnaires was distributed to participants who fulfilled the inclusion criteria and agreed to take part in the study. It took about 20 minutes for each participant to complete the questionnaire. Data collections were carried out from December 2015 until February 2016 (Figure 3.1)

3.8.1 Flow chart of study

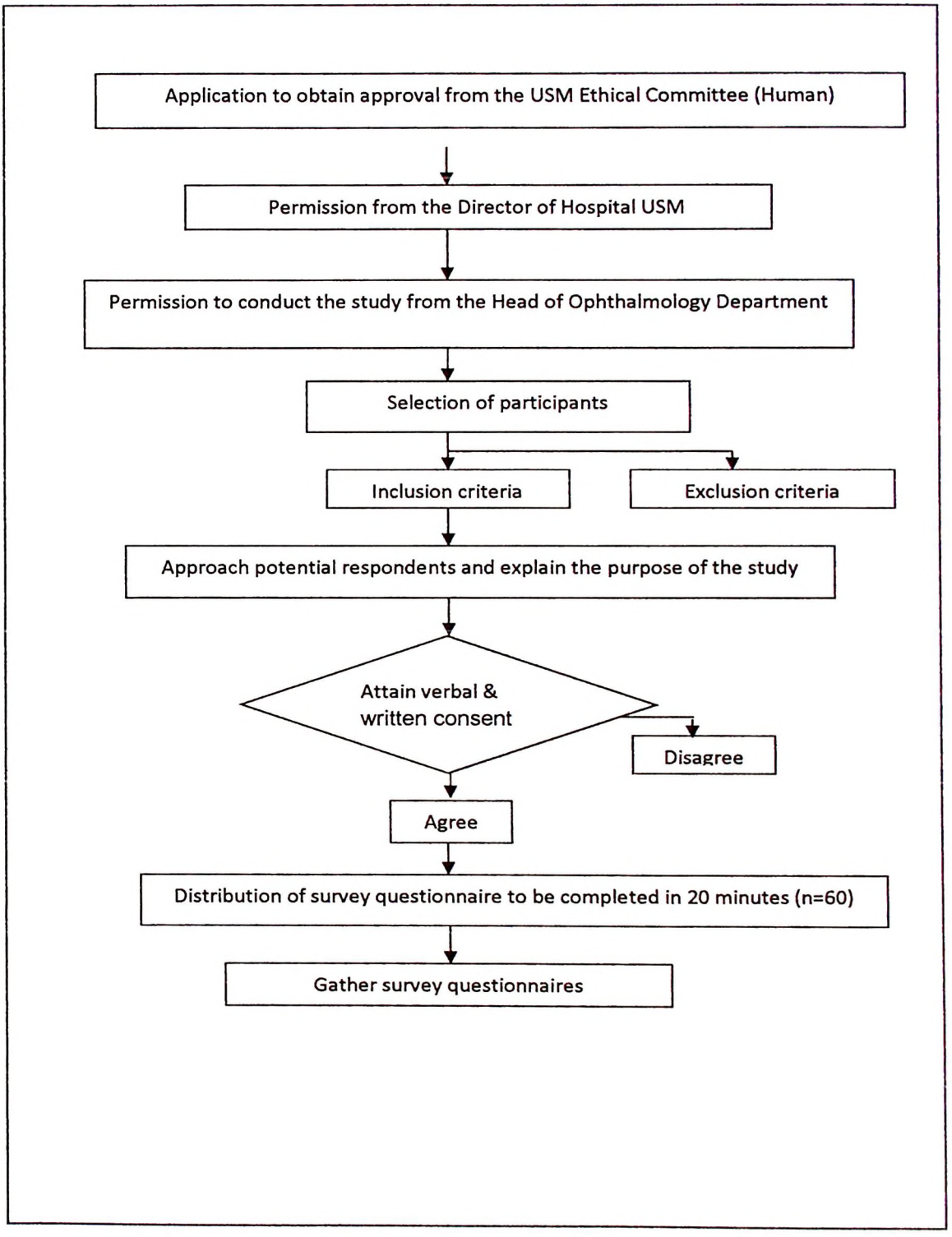

Figure 3.1 Flow chart of study

3.9 Data Analysis

The data was analysed statistically using Statistical Package for Social Sciences (SPSS Inc.) version 22.0.). P-values of <0.05 will be taken as significant.

The modified version of VFQ-25 was already translated into Malay language from the original and adjusted from 12 subscales to the 7 subscales according social demographic and local culture at Ophthalmology Clinic Hospital USM by Azreen (2008). The Likert scoring method to convert the data from each subscale into a score from between 0 to 100 where 100 represents good quality of life (Mangione et al, 2001).

Objective 1.

Descriptive analyses was used for the main values and standard deviation (SD).

Objective 2.

Pearson correlation was used to compare the score level vision related quality of life between distant and near vision among Diabetic retinopathy patients at Hospital USM.

Objective 3.

The statistical analysis that was used to determine the association between socio-demographic factors and vision-related quality of life and among Diabetic retinopathy patients in Hospital USM as below:

- Age: Pearson correlation test
- Gender: Independent T-test
- Level of education, monthly Income: one-way ANOVA test

CHAPTER 4

RESULT

4.1 Introduction

This chapter presents the findings of the study including socio-demographic characteristics data, quality of life Diabetic retinopathy participants at Eye Clinic, Hospital University Sains Malaysia (Hospital USM).

4.2. Socio-Demographic Data

A total of 60 patients were enrolled into the study from December 2015 to February 2016. The age of the participants between 30 to 65 years. The majority of them were Malay which contributed 57 participants (95%), the rest were Chinese (2 participants, 3.3%) and others only one participants (1.6%). Thirty three (55.0%) of them were male and 27 (40.0%) were female. For the income per month it was divided into three group, participants with income lower than RM1000 was 48.3%, 22 participants (36.6%) were income from RM1001-RM5000, and 9 participants (15%) were income RM5001 and above.

The education level of participants in this study were University (n=16, 6.7%), secondary school (n=35, 58.3%), primary school (n=5, 8.3%) and no education (n=4, 6.7%). Medical illness that were associated with diabetic mellitus include hypertension, hyperlipidaemia, ischemic heart disease and renal disease. Table 4.1 shows the distribution of socio-demographic data.

Table 4.1: Socio-demographic data (n=60)

Variables	Frequency	Percentage
Gender		
Male	27	45.0
Female	33	55.0
Ethnic		
Malay	57	95.0
Chinese	2	3.3
Others	1	1.6
Level of Education		
University	16	26.7
Secondary School	35	58.3
Primary school	5	8.3
No Education	4	6.7
Income per Month		
≤RM1000	29	48.3
RM1001-RM5000	22	36.6
≥RM 5001	9	15.0
Medical Illness		
Diabetic Mellitus	60	100.0
Hypertension	39	65.0
Ischemic Heart Disease	6	10.0
Hyperlipidaemia	27	45.0
Renal Disease	4	6.7

4.3. Mean VFQ-25 score quality of life diabetic retinopathy patients (n=60)

The mean VFQ-25 score (all VFQ-25 domain and overall composite score for diabetic retinopathy patients for this study was shown in table 4.2. All of the domain had mean scores ranging from 45 to 67. The highest mean score was general vision [66.33(27.98)] and the lowest mean score was general health & vision [45.20(19.18)]. The mean composite score was [57.77(7.80)] which mean that the quality of life of diabetic retinopathy patients at Eye Clinic Hospital USM fall into the moderate quality of life.

Table 4.2: Mean VFQ-25 score quality of life Diabetic retinopathy patients (n=60)

VFQ-25	Mean Score (SD)
Composite score	**57.77(7.80)**
Subscale/Domain	
General Health & Vision	**45.20 (19.18)**
Difficulty with activity	55.12 (20.56)
Response to vision problem	64.92 (26.22)
General Health	64.30 (27.28)
General Vision	**66.33 (27.98)**
Near Vision	52.23 (27.91)
Distant Vision	56.26 (24.54)

4.4 To correlate vision related quality of life between distance vision and near vision among Diabetic retinopathy patients at Hospital USM.

Table 4.3 showed the score level vision-related quality of life between near vision and distance vision. There were significant differences of mean score near vision and the distance vision (<0.001).

Table 4.3. Correlation of VFQ-25 with near vision and distance vision (n=60)

Variables	Mean (SD)	Mean score (n=60)	p-value
Near vision	55.98 (25.20)	0.841	<0.001
Distance vision	59.67 (23.28)	0.832	<0.001

*Pearson's correlation